Serial No. 09/648,857

Attorney Docket No. 400.002US01

Title: ADJUSTABLE TIMING CIRCUIT OF AN INTEGRATED CIRCUIT

4. (original) The integrated circuit timing circuit of claim 1 further comprises a set/reset latch coupled to an output of the adjustable delay element.

- 5. (original) The integrated circuit timing circuit of claim 1 wherein the adjustable delay element comprises a plurality of capacitors selectively coupled to a propagation path in response to the programmable non-volatile fuse circuit to establish one of the plurality of propagation times.
- 6. (currently amended) An integrated circuit timing circuit comprising:

  a programmable non-volatile fuse circuit;

  a volatile latch circuit coupled to the non-volatile fuse circuit; and

  a plurality of adjustable delay elements generating a signal having an edge, each

  adjustable delay element coupled to the volatile latch circuit, each of the plurality of

  adjustable delay elements comprises a propagation path, and a plurality of capacitors

  selectively coupled to the propagation paths of the plurality of adjustable delay elements
  in response to the volatile latch circuit; and

a plurality of set/reset flip-flops triggered off of a signal edge or a certain number of delay elements and reset by other edges or numbers of delay elements.

- 7. (original) The integrated circuit timing circuit of claim 6 wherein the plurality of capacitors selectively coupled to the propagation paths via a switch activated by the volatile latch circuit.
- 8. (original) The integrated circuit timing circuit of claim 6 further comprising: logic circuitry coupled to an input of the plurality of adjustable delay elements; and latch circuitry coupled to an output of the plurality of adjustable delay elements.
- (currently amended) A memory device comprising:
   an array of memory cells;



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access circuitry to generate a plurality of memory array access signals; and an adjustable timing circuit coupled to the access circuitry, the adjustable timing circuit comprises,

a programmable non-volatile fuse circuit, and

an adjustable delay element coupled to the programmable non-volatile fuse circuit, the delay element has a plurality of propagation times selectable in response to the programmable non-volatile fuse circuit, the delay element to adjust one of an edge position of at least one signal relative to other edges, a plurality of edge positions relative to other edges, or a duration of a single signal relative to other signals.

- 10. (original) The memory device of claim 9 further comprising a volatile latch circuit coupled between the programmable non-volatile fuse circuit and the adjustable delay element.
- 11. (original) The memory device of claim 9 wherein the programmable non-volatile fuse circuit comprises a plurality of flash memory cells.
- 12. (original) The memory device of claim 9 wherein the adjustable delay element comprises a plurality of capacitors selectively coupled to a propagation path in response to the programmable non-volatile fuse circuit to establish one of the plurality of propagation times.
- 13. (currently amended) A synchronous flash memory device comprising: an array of non-volatile memory cells; access circuitry to generate a plurality of memory array access signals; and an adjustable timing circuit coupled to the access circuitry, the adjustable timing circuit comprises,
  - a programmable non-volatile fuse circuit comprising non-volatile memory cells,
    - a volatile latch circuit coupled to the non-volatile fuse circuit, and



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volatile fuse circuit; and

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a plurality of adjustable delay elements generating a signal having an edge, each adjustable delay element coupled to the volatile latch circuit, each of the plurality of adjustable delay elements comprises a propagation path, and a plurality of capacitors selectively coupled to the propagation paths of the plurality of adjustable delay elements in response to the volatile latch circuit; and a plurality of set/reset flip-flops triggered off of a signal edge or a certain number of delay elements and reset by other edges or numbers of delay elements.

- 14. (original) The flash memory of claim 13 wherein the plurality of capacitors selectively coupled to the propagation paths via a switch activated by the volatile latch circuit.
- 15. (currently amended) A method of adjusting a signal timing circuit comprising: programming a non-volatile fuse circuit; and selecting a signal propagation time length in response to the programmed non-

selecting an edge position in response to the programmed non-volatile fuse circuit.

- 16. (original) The method of claim 15 wherein selecting the signal propagation time length comprises selectively coupling one or more capacitors to a propagation path of the signal timing circuit.
- 17. (original) The method of claim 15 wherein the non-volatile fuse circuit comprises a plurality of floating gate transistors.
- 18. (original) The method of claim 15 further comprises storing data from the non-volatile fuse circuit in a plurality of volatile latches.
- 19. (currently amended) A method of adjusting a signal timing circuit comprising: programming a plurality of non-volatile fuses to store first data;



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copying the first data from the plurality of non-volatile fuses to a plurality of latch circuits; and

selecting a signal propagation time length in response to the first data stored in the plurality of latch circuits; and

selecting an edge position in response to the programmed non-volatile fuse circuit.

- 20. (original) The method of claim 19 wherein the wherein selecting the signal propagation time length comprises selectively coupling one or more capacitors to a propagation path of the signal timing circuit.
- 21. (original) The method of claim 19 wherein the non-volatile fuse circuit comprises a plurality of floating gate transistors.
- 22. (currently amended) A method of testing a memory device comprising a signal propagation path, the method comprises:

programming a plurality of non-volatile fuses to store first data;

selectively coupling one or more capacitors to the propagation path in response to the first data to provide a first propagation path delay time and an edge position for edges of signals;

testing the memory using the first propagation path delay time;
programming the plurality of non-volatile fuses to store second data;
selectively coupling one or more capacitors to the propagation path in response to
the second data to provide a second propagation path delay time; and
testing the memory using the second propagation path delay time.

- 23. (original) The method of claim 22 wherein the memory device is a flash memory having an array of floating gate memory cells and the plurality of non-volatile fuses comprise floating gate transistors.
- 24. (original) The method of claim 22 further comprising:



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copying the first data from the plurality of non-volatile fuses to a plurality of latches before selectively coupling one or more capacitors to the propagation path in response to the first data; and

copying the second data from the plurality of non-volatile fuses to the plurality of latches before selectively coupling one or more capacitors to the propagation path in response to the second data.

Please add new claims 25-30 as follows:

- 25. (new) The method of claim 15, wherein selecting edge position comprises: selecting a single signal edge to move; and moving the selected signal edge relative to other signal edges.
- 26. (new) The method of claim 15, wherein selecting edge position comprises: selecting an edge to move; moving the selected edge; and moving other edges relative to the selected edge.
- 27. (new) The method of claim 15, wherein selecting edge position comprises: selecting a subset of edges to move; and moving each of the selected edges at the same time.
- 28. (new) The method of claim 19, wherein selecting edge position comprises: selecting a single signal edge to move; and moving the selected signal edge relative to other signal edges.
- 29. (new) The method of claim 19, wherein selecting edge position comprises: selecting an edge to move; moving the selected edge; and moving other edges relative to the selected edge.



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30. (new) The method of claim 19, wherein selecting edge position comprises: selecting a subset of edges to move; and moving each of the selected edges at the same time.

R.D.